XDEEP
DIVING EQUIPMENT

ZEOS 28

ZEOS 38

HYDROS 40

HYDROS 50

User manual
English

1 Introduction

Congratulations!

You have purchased a perfect product in which, without any compromise, we have connected the best existing materials made in Europe and in the USA, with both our technical and recreational diving experience. While designing it, we have also consulted a considerable number of divers who use various configurations of equipment from many various producers.

We hope that our product meets your expectations, regardless of whether you are a recreational diver or an experienced tech diver.

Pre-use guidelines

Before you use any of the products described in this manual, carefully read all the information contained herein with comprehension. Becoming familiar with this information is a prerequisite for safe and long-term use of the products described in this document.

This manual is intended as a guide for correctly trained divers, and so a number of matters related to diving are described here only roughly. In no way can this manual act as a substitute for professional diver training or course. Therefore, before you start using any of the products described in this manual, make sure that you have relevant qualifications issued by a registered diving organization.

If any of the information contained in this manual or if any information label placed on the Buoyancy Compensation Device is not clear, contact the manufacturer for explanation:

WRECKANDREEF Piotr Czernik
Ul.Ogrodników 3, 43-227 Góra
Poland
Phone: +48 12 44 66 998
e-mail: biuro@xdeep.pl

Important!

This manual includes two types of designation, which you should pay special attention to. They indicate warnings or other information which may be crucial for health and life of the user or other people. You should read them with special attention:

Danger!

Indicates an imminently hazardous situation which, if not avoided, will result in a serious accident which may cause death or serious injury.

Warning!

Indicates a potentially hazardous situation which, if not avoided, could cause damage to the product or serious injury. It may also indicate wrong and dangerous practices.

2 CE certification

The products described in the following instruction have been a subject of certification in a recognized unit and meet the requirements of 89/686/EWG directive and of the norm EN1809:2001, synchronized with this directive, in its full extent; and of EN 250:2003 covering scuba harness.

The compatibility assessment of ZEOS 38, HYDROS 50 and HYDROS 40 has been conducted by:

Polski Rejestr Statków S.A.,
Recognised certification unit nr 1463

Al.Gen.Józefa Hallera 126
80-416 Gdańsk
Poland

The compatibility assessment of ZEOS 28 has been conducted by:

VOP-026 Šternberk, s.p.
Jednostka notyfikowana nr 1380

Olomoucká 1841/175
785 01 Šternberk
Czech Republic

ZEOS 38, ZEOS 28, HYDROS 50 and HYDOS 40 buoyancy compensators has been certified as compatible with 89/686/EWG directive, as far as it contains air compatible with EN 12021 norm. Regarding the lack of EN norms for safety requirements while the use of it takes place with mixtures of higher oxygen content, the above mentioned buoyancy compensator cannot be regarded as one which has been a subject of CE certification with gas mixtures with oxygen level higher than 21% (+/- 2%) as stated in 89/686/EWG directive.

Warning!

In non-EU countries additional conditions, law requirements and buoyancy compensator norms may exist. Double check the current requirements in the country in which you intend to use it.

Warning!

The buoyancy compensator is not a safety jacket: it does not guarantee a proper head-up position on the surface.

3 Safety rules

Danger!

xDEEP BCDs are designed to provide the user with safety and comfort. Improper use may result in an accident, therefore it is necessary to comply with ALL of the following rules.

1. Before every dive, carefully inspect all elements of the equipment, including the BC. For further information on the subject, read: “Pre-dive inspection”.
2. Do not dive with the BC if there are signs of defective operation, damage or wear, such a BC should be withdrawn from use until it is repaired by an authorized WreckAndReef distributor.
3. During diving, perform mutual buddy-check, visually inspecting the BC against any leakages or other irregularities. Arrange checkout procedures with your buddy and practice relevant diving signs once again before diving.
4. In case of an uncontrolled ascent, you should immediately start releasing air from the BC in order to stop or slow down the rate of ascent.
5. In order not to drown as a result of an uncontrolled descent, in all cases you should be able to use an emergency source of buoyancy or remove the weight. The BC **CANNOT** be the only source of buoyancy!
6. Do not use your BC to lift or bring heavy objects to the surface. Doing so may result in a serious accident due to damage done to the BC or an uncontrolled ascent. For bringing objects heavier than 2kg, use appropriate equipment, such as a lift bag.
7. To prevent the BC from damage, avoid prolonged exposure of your BC to direct sunlight or extreme heat and keep it away from sharp objects.
8. Do not inhale air from the BC. It may contain harmful contaminants, gases, or dangerous bacteria which evolve in damp places.
9. A BC is not a lifejacket and does not guarantee a head-up position of the user on the surface. Therefore, you should always dive with a buddy in case of losing consciousness on the surface.
10. Do not lift or move the BC by pulling the inflator hose. Such practice may result in irreparable damage to the BC.
11. When diving in cold water (below 10 degrees Celsius), you should take into account that the inflator may freeze, as a result of which, it may supply air in an uncontrolled way, or other irregularities in its operation may appear. Before diving in cold water, it is necessary that you practice emergency procedures should the inflator freeze!

4 BC Elements 1/2

Thanks to its modular design, a xDEEP BC can be adjusted to every type of diving, starting with simple recreational diving with the use of a single tank and finishing with deep technical diving which requires configuration with a double tank set and stages.

The BC can be used with any harness which has two mounting holes of 12mm and a spacing of 11 inches. However, we recommend using one of high quality CE certified xDEEP harnesses.

BC design

Fig. 1. Kompensator ZEOS (przód)

Fig. 2. Kompensator HYDROS (przód)

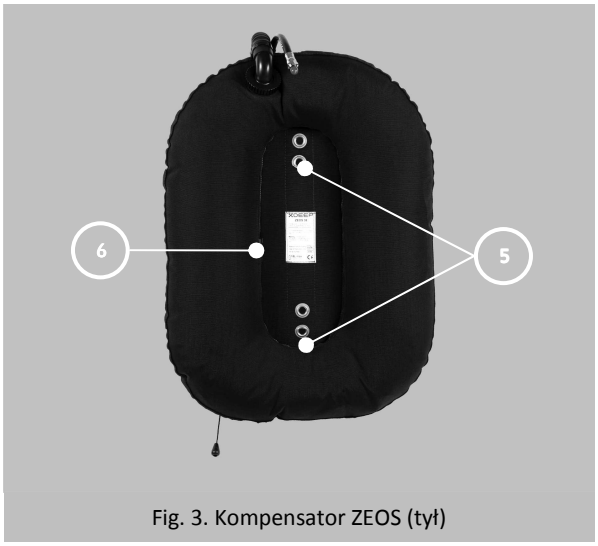

Fig. 3. Kompensator ZEOS (tył)

Fig. 4. Kompensator HYDROS (tył)

1. Outer shell
2. K-Type Power Inflator
3. Inflator hose
4. Over pressure relief valve
5. Mounting holes'
6. Zipper

K-type Power Inflator

A K-type inflator is a reliable device made of shock-proof technopolymer which is resistant to environmental conditions. The inflator valve is made of metal, which makes the inflator more resistant to freezing and it can be operated much longer than inflators made entirely of plastic.

The inflator is equipped with an inflator button (1) to inflate the BC with air, a purge button (2) to deflate the BC or inflate it orally, and a mouthpiece (3) to release the air that is deflated or inhale the BC orally.

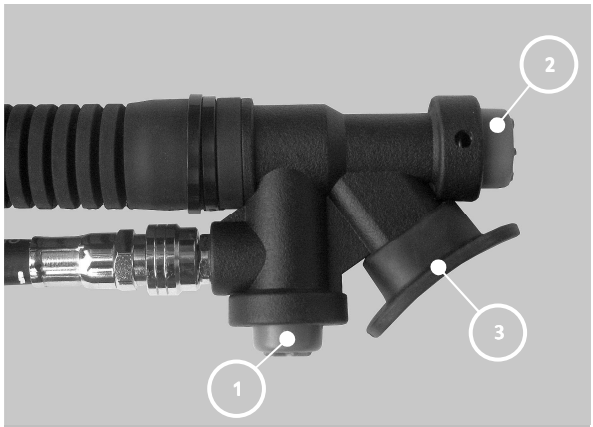

Fig. 5. K-type inflator

5 BC Adjustment

When you order a complete BC system, you get all elements connected and ready for use. For improved comfort and safety of use you should, however, make some final adjustments of the harness straps.

The adjustment description below applies to the most basic model of harness, consisting of steel or aluminium plate and one piece of webbing, which is popular among technical divers. If you want to use a different model of harness, specific details on connecting its elements are included in its manual.

Fig. 6. Place of harness straps adjustment

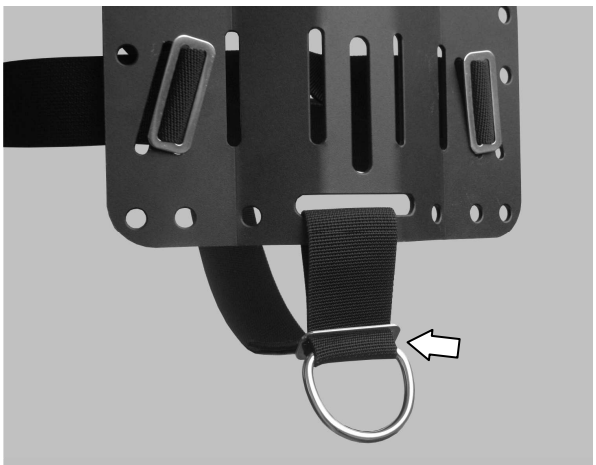

Fig. 7. Place of crotch strap straps adjustment

Harness straps and crotch strap are adjusted by moving the triglide fastener (stopper) along the webbing. Proceed as follows:

1. Put the webbing into the slot of the stopper on the side where you want to shorten the webbing, so that there is some extra webbing in the central element of the tri-glider.

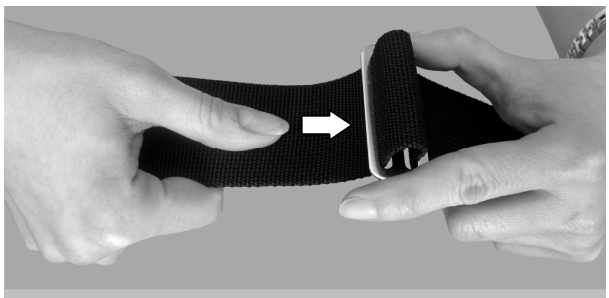

Fig. 8. Harness strap adjustment – step 1

2. Pull the excess webbing through the slot in the stopper from the other side.

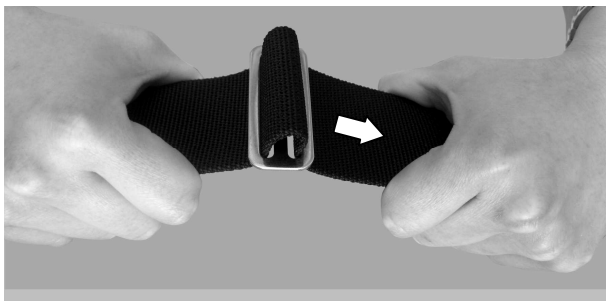

Fig. 9. Harness strap adjustment – step 2

6 Connecting the LP hose

To allow for proper operation of the inflator it must be connected to the LP port of the 1st stage of the regulator using the LP hose supplied with the BC.

Danger!

LP hose connection using the 1st stage of the regulator must be made to the low pressure (LP) port only. Connection to the HP port may result in serious injuries as well as damage to the equipment.

In order to connect the LP hose to the inflator you should gently pull at the sleeve of the LP hose's nozzle (step 1), and then put the nozzle onto the quick connector (step 2), as presented in the pictures below:

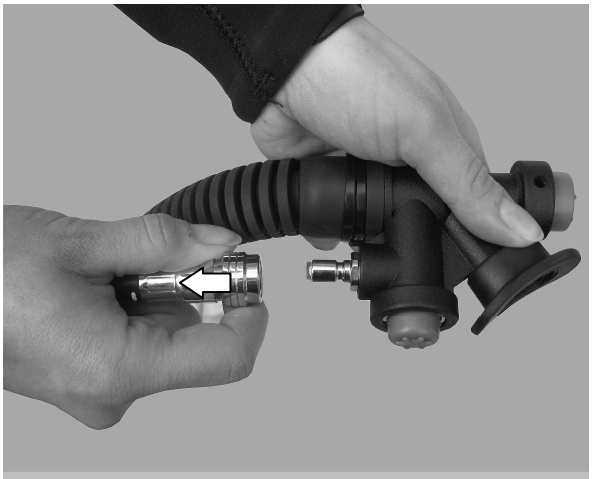

Fig. 10. LP hose connection (step 1)

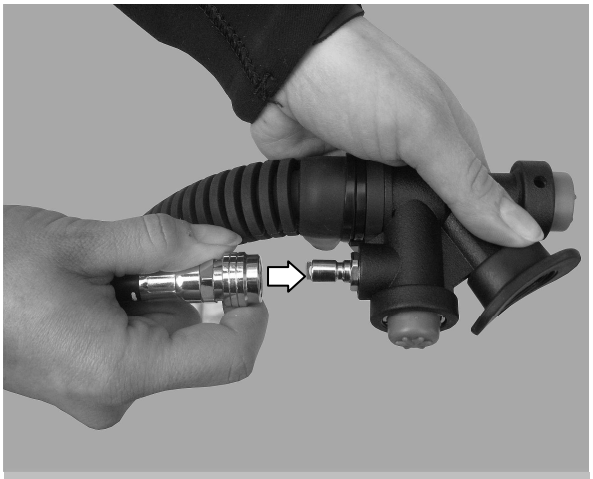

Fig. 11. LP hose connection (step 2)

Warning!

The inflator supply pressure value should be between 6 and 15 bar. Before connecting the inflator to the LP hose, make sure that the pressure from the regulator is within this range.

7 Connecting the Scuba Tank 1/2

Danger!

An incorrectly connected tank may unexpectedly detach from the harness. Such situation is extremely dangerous and may result in a serious accident or even death. Therefore the tank connection has to be inspected closely.

Connecting the single SCUBA tank to ZEOS 38 and ZEOS 28 compensators

In order to connect the tank with the BC in a reliable and safe manner you should connect the webbing as indicated in the pictures below:

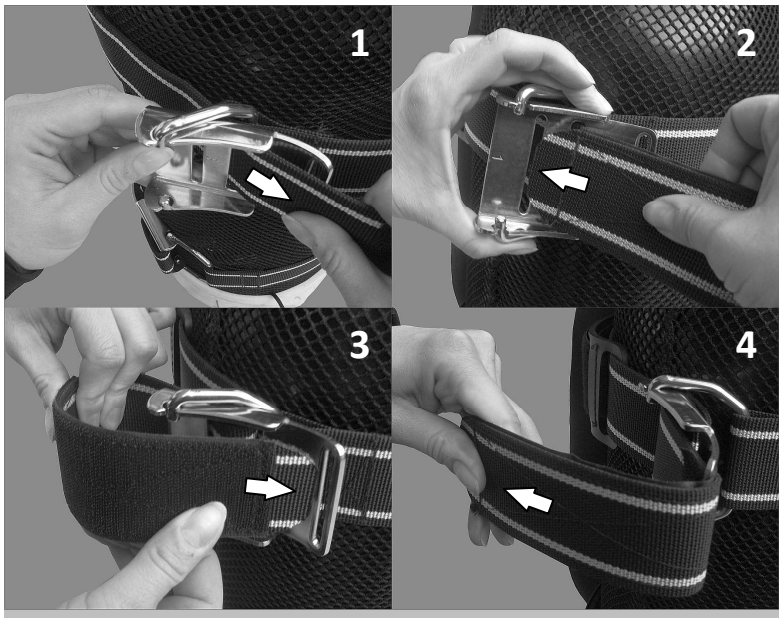

Fig. 12. Installation of the tape the buckle

Danger!

Before connecting the tank, carefully wet the connecting straps. Otherwise they may loosen and the tank may slip out.

8 Connecting the Scuba Tank 2/2

Connecting the double SCUBA tanks to HYDROS 50 and HYDROS 40 compensators

In order to connect the double scuba tank in proper and safe way, read and understand the user manual delivered with the double set.

To install the BC on double tank set:

1. Put the double tank set in the stable surface to have bolts on the top.
2. Place the BC on the bolts. The inflator's elbow adapter should be on the cylinder-side.
3. Place the backplate on the bolts.
4. Tighten the screws.

9 Pre-dive Inspection

Before every dive it is necessary to follow the inspection procedures for checking the correct operation of all BC elements. Even if on a given day you have already dived using your BC, before diving again make sure that all of its elements are working correctly.

1. Check that no element of the BC show any signs of wear, paying particular attention to the condition of webbing, buckles, the outer shell and the LP hose.

2. Check whether all detachable elements are tightened correctly; those are: bolts, valves, hose adapter and single tank adapter (if applicable).

3. Check the BC's oral inflation putting the inflator's mouthpiece into your mouth and pressing the purge button while breathing out. Using this method, inflate the BC to at least half of its volume.

4. Press the inflator button until the automatic dump valve is activated. The automatic dump valve should open with a characteristic sound. The air supply should stop immediately after release of the inflator button.

5. Check the correctness of manual operation (opening) of the dump valve by pulling on its string. By doing so you should release air.

6. Inflate the BC using the inflator button and then press the purge button, checking whether air is being released from the oral inflator's hole. Repeat this step a couple of times.

7. Inflate the BC using the inflator button and leave it fully inflated for 15 minutes. After the 15 minutes the BC should remain full. If it is not, do not use it until the defect is removed by an authorized WreckAndReef service center.

8. During descent, stop at three meters at the most and perform mutual buddy-check, visually inspecting the BC against any leakages. Caution: Air bubbles appearing on the outer shell do not necessarily mean leakage. They may result from air being stuck in the structure of the fabric or under the inner shell.

10 Operation

Buoyancy on the surface

In order to ensure maximum buoyancy on the surface, before getting into the water (or directly after ascending) inflate the BC using inflator button. Stop inflating the BC when the automatic dump valve activates.

Danger!

Before jumping into deep water from a boat or a bank inflate the BC using the inflator button. Getting into water with the BC not fully inflated may result in drowning!

Descent

In order to descend, press the purge button holding the inflator over your head. Use the purge button with care, as releasing too much air may result in an uncontrolled descent.

Neutral buoyancy

Maintain neutral buoyancy for a given depth during the dive, using the inflator and purge buttons as needed.

In order to ensure precise control over buoyancy you should press the inflator button for a short moment. If more air needs to be added to the BC, press the inflator button for a short moment several times.

During release of air from the BC hold the inflator over your head, so the air may escape freely.

Ascent

Ascending too quickly may result in decompression sickness. Therefore you must control the rate of ascent by gradually releasing the expanding air from the BC with the purge button.

Danger!

Ascending or reducing the depth level too quickly may result in decompression sickness (DCS). Always pay adequate attention to buoyancy control and respect the ascent rate limits.

11 Post-dive maintenance

Disconnecting

After diving, take out the weight from the weight pockets (if applicable), disconnect the LP hose from the inflator, and then disconnect the tank.

Draining

Inflate the BC orally using the purge button of the inflator. Next turn the BC to keep the automatic dump valve at the lowest point of the BC. Pull the valve string, at the same time pressing the BC with your hands to make water flow out by the open dump valve. Repeat the procedure until all water is removed from the BC.

Rinsing

Every time you use the BC in salt or chlorinated water, it should be rinsed thoroughly inside and out with fresh water. Never use hot water for rinsing!

To rinse the BC inside, press the purge button of the inflator and fill the BC approximately ¼ full with water by means of a garden hose spout or other source of fresh water. Rotate the BC several times, and next drain it according to the above procedure.

Warning!

Do not press the inflator button when rinsing your BC! This may make damp and other contaminants enter the inflator valve, which may cause subsequent damage to the valve.

Drying

After every use, you should dry the BC thoroughly. When drying, the BC should be fully inflated and hung in a dry, airy and dark place. When drying, do not expose your BC to direct sunlight or extreme heat!

Storing

Store your BC partially inflated and hung in a dry and dark place away from sharp objects, lubricants, fuels or solvents.

Warning!

To prevent your BC from damage, you should never keep it wet for a longer period than a dozen or so hours.

12 Repair and maintenance

xDEEP BCDs does not contain any elements which can be repaired by the user, and so all repairs (including lubrication or replacement of worn-out elements) should be performed only by trained technicians holding certificates issued by the producer (authorized service center).

For repair of xDEEP BCDs, only elements and spare parts supplied by the producer must be used. Elements and spare parts from other sources, although identical by all appearances, may have slightly different properties, which may negatively affect the working life of the BC.

The only maintenance procedure which may be performed by the user is rinsing the BC in fresh water. It is recommended after diving in salt or chlorinated water. On no account should detergents, cleaning agents or solvents be used for cleaning the BC. In case of heavy soil, contact the producer for additional information.

Warning!

For safety reasons, the BC should be overhauled after every 200 dives, however not less frequently than once a year. Such overhaul should be performed by an authorised xDEEP service centre.

12 Specification

XDEEP DIVING EQUIPMENT

Basic parameters

Type	Toroidal wing-style BC
Buoyancy	ZEOS 28: 13L ZEOS 38: 17L HYDROS 40: 18L HYDROS 50: 22L
Outer shell fabric	Cordura 1100 dTEX
Inner bladder fabric	Nylon 440 dTEX
Spacing between backplate mounting holes	11 inches (27.94 cm)
Dry BC weight (without harness)	ZEOS 28: 1.05 kg ZEOS 38: 1.2 kg HYDROS 40: 1.2 kg HYDROS 50: 1.3 kg

Inflator

Type	“K” type
Supply pressure	Between 6 bar and 17.23 bar (250 PSI)

Permissible tank parameters

Tank type	ZEOS 28 and ZEOS 38: single tank only HYDROS 40 and HYDROS 50: double cylinder set
Maximum size	ZEOS 28: 15 L ZEOS 38: 18 L HYDROS 40: 2x15 L HYDROS 50: 2x18 L
Diameter	Between 140 mm and 220 mm

Operating temperature

Water temperature	Between -2°C and 40°C
Air temperature	Between -20°C and 60°C

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